Alberta Official Statistics
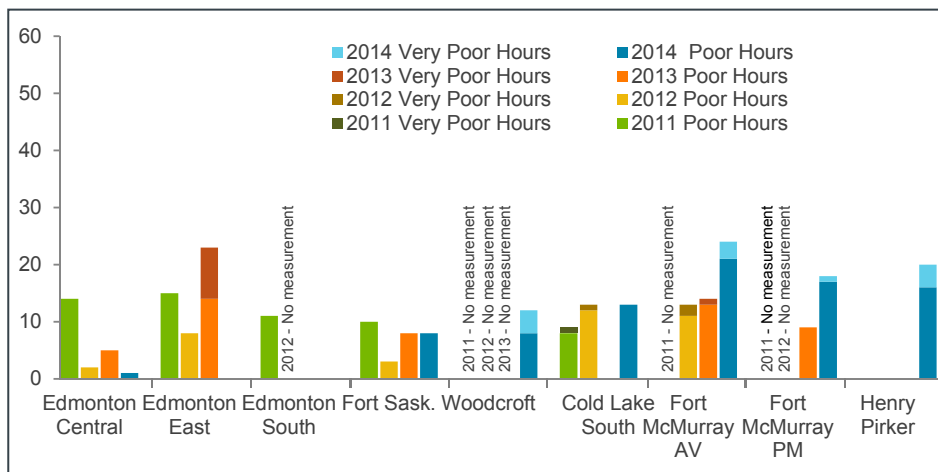
Air Quality Index – Poor and Very Poor Hours, Alberta

- Ambient air quality is measured at air monitoring stations located throughout Alberta. The Air Quality Index (AQI) is one way of measuring ambient air quality. The AQI is calculated from five continuously monitored air pollutants: carbon monoxide (CO), fine particulate matter ($PM_{2.5}$), nitrogen dioxide (NO_2), ozone (O_3) and sulphur dioxide (SO_2). The highest measurement for any of the five pollutants determines the AQI value for that hour for that station. The higher the AQI number, the greater the level of pollution. The AQI is divided into four categories: Good, Fair, Poor, and Very Poor.

- Fair, Poor or Very Poor air quality conditions can result from many circumstances. When there is a strong temperature inversion and light winds, creating a layer of cool stagnant air near the ground, air pollutants from automobiles, industry, and residential heating are trapped in this layer, causing increased $PM_{2.5}$ concentrations. Smoke from forest fire events in and outside Alberta can also cause episodes of Poor and Very Poor air quality. In sunny weather, ozone can be generated through complex chemical reactions involving oxides of nitrogen and volatile hydrocarbons. In the springtime, ozone from natural sources including the upper atmosphere is often observed.

- Year-to-year changes in the number of poor and very poor hours are almost entirely accounted for by the frequency of forest fire and smog events. Fires in northeast Alberta in 2011 and the Northwest Territories in 2014 produced large amounts of smoke, while 2012 and 2013 had less forest fire activity. The winters of 2011 and 2013 were also affected slightly more than 2012 and 2014 by wintertime smog events.

- Current Air Quality Information can be found through the *Alberta Environment and Parks'* website.

Number of Poor and Very Poor Hours
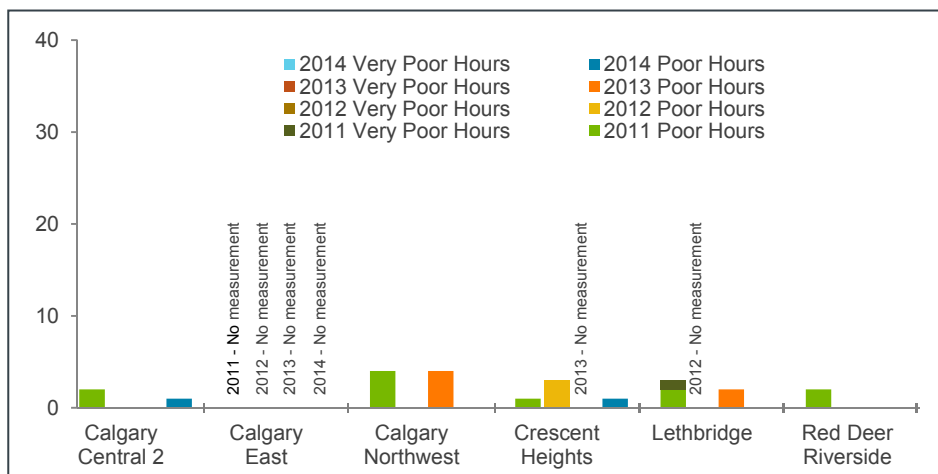
North

Source: Clean Air Strategic Alliance (CASA) Data Warehouse

Number of Poor and Very Poor Hours

South

Source: Clean Air Strategic Alliance (CASA) Data Warehouse

Alberta Government